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ABSTRACT

The purpose of the study was to determine if measures of first grade readiness, scholastic aptitude, and reading achievement were significant predictors of reading achievement at the end of third grade for Mexican American students from 2 lower socioeconomic levels. Students (47 boys and 47 girls) who had completed their third year in the Sustained Primary Program for Bilingual Students in Las Cruces, New Mexico, were placed in 9 subgroups. The predictor variables were the 13 tests from which the prediction of third grade reading achievement was made. The data were analyzed by 2 procedures: (1) a multiple regression analysis to determine the relationship between a combination of the 13 tests utilized for prediction and third grade reading achievement and (2) a stepwise multiple regression analysis which identified the individual contribution of each of the 13 tests to the prediction of third grade reading achievement. Findings indicated that a significant multiple correlation existed between the 13 first grade tests used and third grade reading achievement at the .05 level of confidence for (1) total sample of boys, (2) total sample of Social Class IV, and (3) total sample of Social Class IV girls. The report reviewed literature dealing with the effects of social class and/or minority group membership upon test performance and the effect of sex differences on school achievement test scores. (NQ)

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READING ACHIEVEMENT
OF
LOWER SOCIOECONOMIC LEVEL
MEXICAN AMERICAN STUDENTS

by

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READING ACHIEVEMENT OF LOWER SOCIOECONOMIC LEVEL MEXICAN AMERICAN STUDENTS

Review and Synthesis

A review of research related to the effects of social class and/or minority group membership upon test performance revealed a consistent tendency for test results to favor children from more advantaged groups. Over twenty years ago, Anastasi and Foley concluded that "in general there seems to be a difference of about 20 points between the mean I.Q.s of children of professional people and day laborers" (1949, p. 800). Furthermore, these authors reported that the magnitude of this difference was as apparent at the ages of 2 to 5 as at the ages of 15 to 18.

In the same decade, Havighurst and Breese (1944) studied students from a Midwestern community in grades four through nine. These authors reported a test performance advantage for higher over lower social status children, especially on those subtests of Thurston's Test of Primary Abilities which measured number, verbal, and word fluency abilities. The advantage of the higher social status child was less pronounced on the spatial and memory subtests. More recently, Goldberg (1968), in reviewing studies which compared ability and achievement test scores of lower and middle class pupils, reported an advantage favoring middle class students even on reportedly culturally fair tests.

The influence of social class membership upon modalities employed by children in problem solving was investigated by

Deutsch (1968). Using the Illinois Test of Psycholinguistic Abilities, Deutsch found that lower-class children experienced more difficulty with subtests involving auditory input channels than with items presenting information visually. The Digit Span subtest was an exception to this finding. Deutsch concluded that the cultural environment influences the acquisition of learning modalities.

Gredler (1968) explored the influence of specific minority group membership upon test performance. His subjects were disadvantaged third- and fourth-grade students from one Negro and one Caucasian school. The Draw-A-Man, the Metropolitan Achievement Test Reading Test Battery, and the Minnesota Percepto Diagnostic Test were administered. On the Metropolitan Achievement Test, both groups scored below the norm, but the between-group differences were not significant. Both groups surpassed the standardization sample for number of rotations on the Minnesota Percepto Diagnostic Test, but the Negro subjects produced significantly more rotations than did the Caucasian subjects. Gredler concluded that environment not only influences school achievement but also shapes the individual's reaction to specific tasks.

The test performance of Mexican American subjects, especially on ability tests, has not been neglected in the literature; however, a comprehensive review of these studies will not be made in this monograph. Rather, the reader is directed to Darcy (1963) for a thorough review of research related to Mexican American students' performance on ability tests. Darcy's review of

research on Spanish-English bilinguals in the Southwest revealed a tendency in test results for bilinguals to receive significantly lower scores on verbal tests of intelligence than on nonverbal tests of intelligence. Furthermore, when subjects were not matched by socioeconomic levels, monolinguals scored higher on both verbal and nonverbal tests of intelligence; but when subjects were matched by socioeconomic levels, the results of nonverbal intelligence tests did not show significant differences between the monolingual and bilingual groups.

At this juncture, one can reasonably conclude that the literature is replete with studies which demonstrate the influence of social class and/or minority group membership upon test performance. There is, however, a dearth of research exploring the utility of various aptitude and readiness tests as predictors of academic performance for males and females from minority groups.

DeHirsch, Jansky, and Langford (1966) attempted to predict second grade reading performance for students from the lower-middle socioeconomic level. The following measures were found to be related significantly to overall reading performance at the completion of the second grade: Behavioral Control, Pencil Use, Human Figure Drawing, Bender Visual Motor Gestalt Test, Tappendont Patterns, Wepman Auditory Discrimination Test, Story Organization, Number of Words Used, Categories, Name Writing, Letter Naming, Horst Reversals Test, Word Reproduction, Ego

Strength, and Work Attitude. Letter Naming was found to be the best predictor of reading performance.

Mitchell (1967) conducted two studies which compared the predictive validity of readiness tests for various ethnic groups. In the first study, results obtained by administering the Metropolitan Readiness Test and the Murphy-Durrell Reading Readiness Analysis to beginning first grade students were used to predict end of first grade performance on the Stanford Achievement Test subtests pertaining to reading and spelling. The ethnic grouping of these subjects were as follows: White, 7,310; Negro, 518; Mexican American, 139; Oriental, 37; ethnic origin unknown, 1,473. His second study examined, for Negro and Caucasian children within a county in the state of Virginia, the relationship of the Metropolitan Readiness Test scores to end of first grade reading test scores on the Metropolitan Achievement Test. From these two studies, Mitchell concluded that the predictive validity for the two readiness tests was similar for all groups studied.

Mishra (1970) investigated the relationship between scores obtained on the Metropolitan Readiness Test (MRT) administered in first grade and on the Metropolitan Achievement Test (MAT) subtests of Word Knowledge and Reading secured at the completion of the third grade. The subjects were 40 male and 33 female Mexican American children living in a poverty area in Tucson, Arizona. The MRT subtests, Numbers, Alphabet, and Total Score, had the highest correlations with the MAT. Mishra concluded that, for Mexican American Children from poverty areas, verbal subtests on

the Metropolitan Readiness Tests have lower reliability and predictive value than those not requiring as much ability in English.

Research findings regarding sex differences in intelligence and school achievement test scores were summarized by Anastasi and Foley (1949). They reported that while sex differences were slight, girls did perform better than boys on verbal intelligence tests. In fact, girls consistently scored higher on national intelligence tests. Anastasi and Foley concluded that significant sex differences on intelligence test scores were dependent upon the items included and that females demonstrated superiority in verbal or linguistic functioning. Girls surpassed boys in those school subjects requiring verbal ability, memory, and perceptual speed; boys exceeded girls in those subjects requiring numerical reasoning, spatial aptitudes, and information subjects, such as history, geography, and general science. Girls consistently obtained higher achievement test scores than boys.

Also, it has been found that most kindergarten tests are better predictors of first grade reading achievement for girls than for boys (DeHirsch et al., 1966).

DeBlassie and Stevens (1969) reported that Mexican American boys displayed more language growth during the first grade instructional period than did Mexican American girls. However, for the same subjects, during the second year of school, girls displayed more language growth than did boys (Cordova, Pomerantz, and Stevens, 1970). Pomerantz (1970) observed few significant

differences among correlation coefficients for the same subjects on the correlated tests, California Test of Mental Maturity (CTMM) and Metropolitan Achievement Test, and concluded that the CTMM was an efficient predictor of achievement for either sex.

Thus, studies related to the influence of sex upon achievement suggest that girls demonstrate more adeptness in areas relying on verbal ability, whereas boys surpass girls in numerical reasoning. Also, significant sex differences on intelligence test scores appear to be a function of the items included. Research reporting inconsistent growth patterns for Mexican American boys and girls preclude definitive conclusions regarding the effect of sex upon language development for these children.

The literature reviewed substantiates the test performance advantage of higher socioeconomic and/or non-minority group membership children. Additionally, a tendency for non-verbally oriented tests to hold more predictive utility for disadvantaged Mexican American students was noted in the literature. Definitive conclusions, however, regarding the influence of sex upon achievement for Mexican American students at the primary level are unwarranted.

The literature review, augmented by a growing concern for the educational needs of disadvantaged Mexican American students, highlights the need to impose more specificity upon the relative contribution of a variety of measures in forecasting achievement for this group of children.

Description of an Investigation

Problem

The central purpose of the study was to determine if measures of first grade readiness, scholastic aptitude, and reading achievement were significant predictors of end of third grade reading achievement for Mexican American students from two lower socioeconomic levels. A subsidiary purpose of the study was to isolate the most effective predictor variables of end of third grade reading achievement.*

Design

The sample involved in the study included 94 students who, in May 1970, completed their third year in the Sustained Primary Program for Bilingual Students in Las Cruces, New Mexico. The criteria for selection of subjects were as follows: (1) subjects were of Mexican American descent; (2) subjects entered first grade in August 1967 and were born during the year 1961; and (3) the sample was comprised of those students for whom readiness, scholastic aptitude, achievement test data, and information regarding the occupational and educational levels of the head of each household were available. The measures required were obtained from (1) the Metropolitan Readiness Test (MRT), administered at

*"Predicting Third Grade Reading Achievement of Lower Socio-economic Level Mexican American Students in a Bilingual Project." Ed.D. study by Frances A. Stevens, New Mexico State University, 1972.

the beginning of first grade, September 1967; (2) the Metropolitan Achievement Test Primary Battery (MAT), administered at completion of first grade, May 1968; (3) the California Test of Mental Maturity (CTMM), administered at completion of first grade, May 1968; and (4) the Metropolitan Achievement Test Elementary Battery, administered at completion of third grade, May 1970. A socioeconomic classification was obtained from the Two Factor Index of Social Position (Hollingshead, 1965). Because of an inadequate representation of Social Classes I, II, and III, only Social Classes IV and V were involved in this study. According to Bergel (1962), Social Class Groups IV and V would be considered representative of the upper-lower and lower-lower social class groups.

Since the desired outcome of the study was the prediction of third grade reading achievement, this was designated the criterion variable, and consisted of a composite reading achievement score derived by combining the standard scores received by an individual on the MAT Elementary subtests of Word Knowledge, Word Discrimination, and Reading. The thirteen tests from which the prediction of third grade reading achievement was made were the predictor variables and included the following: MRT Word Meaning, MRT Sentences, MRT Information, MRT Matching, MRT Numbers, MRT Copying, MRT Total Score, MAT Word Knowledge, MAT Word Discrimination, MAT Reading, CTMM Language Data, CTMM Nonlanguage Data, and CTMM Total Data.

A significant relationship between the thirteen predictor variables and the criterion variable was hypothesized for the

following groups: (1) total sample, $N = 94$; (2) total sample of boys, $N = 47$; (3) total sample of girls, $N = 47$; (4) total sample of Social Class IV, $N = 37$; (5) total sample of Social Class V, $N = 57$; (6) total sample of Social Class IV boys, $N = 21$; (7) total sample of Social Class IV girls, $N = 16$; (8) total sample of Social Class V boys, $N = 26$; and (9) total sample of Social Class V girls, $N = 31$. To identify the tests which were the most effective predictors of third grade reading achievement, a stepwise multiple regression analysis was performed for each of the above subgroups. In these analyses, the extent to which each of the thirteen first grade tests influenced the prediction of third grade reading achievement was determined.

The data obtained in the study were subjected to a twofold procedure which included: (1) a multiple regression analysis to determine the relationship between a combination of the thirteen tests utilized for prediction and third grade reading achievement and (2) a stepwise multiple regression analysis which identified the individual contribution of each of the thirteen first grade tests to the prediction of third grade reading achievement. The significance levels of the statistics provided by these analyses were then determined.

Results

Of the nine subgroups involved in this study, a significant multiple correlation existed between the thirteen first grade tests used for predictive purposes and third grade reading achievement at the .05 level of confidence for (1) total sample of

boys; (2) total sample of Social Class IV; and (3) total sample of Social Class IV girls. In essence, the foregoing indicated that for these three samples, one could predict third grade reading achievement more effectively by using a combination of tests rather than a single test. More specifically, third grade reading achievement could be predicted more effectively with the following rank order combinations of potent predictors:

1. Total sample of boys
(a) CTMM Nonlanguage, (b) CTMM Total, and (c) MRT Numbers
2. Total sample of Social Class IV
(a) CTMM Total Data and (b) MRT Total
3. Total sample of Social Class IV girls
(a) CTMM Total Data, (b) CTMM Nonlanguage, (c) CTMM Language, (d) MAT Word Discrimination, (e) MAT Word Knowledge, (f) MRT Total Data, (g) MRT Sentences, (h) MRT Copying, and (i) MAT Reading.

Discussion of Results

The stepwise multiple regression analyses revealed CTMM Total Data to be the most potent predictor for the total sample of Social Class IV and total sample of Social Class IV girls; it was the second most potent predictor for the total sample of boys. The CTMM was also found to be significantly related to reading achievement in research reported by Dizney and Fleming (1964) and Pomerantz (1970).

The variable CTMM Nonlanguage was found to be a potent predictor of reading achievement in two of the samples. This variable was the most potent predictor for the total sample of boys and the second most potent predictor for the total sample of

Social Class IV girls. It is possible that bilingualism of the subjects may have been reflected in this finding. This conclusion was supported in results reported by Darcy (1963), who concluded that nonverbal or nonlanguage scores on intelligence tests were more valid measures of potential for bilingual students than verbal or language scores.

MRT Total was found to be a potent predictor of reading achievement for two of the subsamples. This variable ranked second in predictor potency for the total sample of Social Class IV and seventh in predictor potency for the total sample of Social Class IV girls. Research conducted by Mishra (1970) also found the MRT Total to be significantly related to third grade reading achievement for Mexican American students.

The predictor variable MRT Numbers was a potent predictor of reading achievement only for the total sample of boys and ranked third in predictor potency. Mishra (1970) also found MRT Numbers to be significantly related to third grade reading achievement.

The other variables which were found to be potent predictors of reading achievement for the total sample of Social Class IV girls were MAT Word Discrimination, MAT Word Knowledge, MRT Sentences, MRT Copying, and MAT Reading. Notice should be made that all of these measures except MRT Copying required verbal or linguistic abilities. These results were consistent with the findings reported concerning the verbal advantage of girls over boys, for example, Anastasi and Foley (1949).

The erratic test performance of lower-lower (Hollingshead's

level V) socioeconomic level Mexican American girls precluded definitive conclusions regarding the prediction of end of third grade reading achievement from the thirteen predictor variables.

Recommendations for Practice

The results of this investigation in combination with extant findings concerning the educational problems of Mexican American students from lower socioeconomic levels suggest that educational practices should emphasize enriching preschool and inschool language development programs.

Preschool Experiences

Preschool language development and readiness programs should be established for Mexican American students from lower socioeconomic levels. Such programs should emphasize a structured language and readiness approach. Support for a structured and highly task-oriented strategy in remediating language deficits for disadvantaged preschool students has been provided in research by C. Bereiter et. al., (1966). One such language program has been developed by Southwestern Cooperative Educational Laboratories (SWCEL) in Albuquerque, New Mexico, and is currently being utilized by many school systems within the southwestern states. This Oral Language Program (OLP) is primarily designed to teach English to non-English-speaking four- to seven-year-old children and is an oral-aural approach which consists of 150 lessons, each of which has a specifically stated objective. The activities

are varied and geared to maintain a high interest level for students (Lujan and Luft, 1971).

To facilitate the communication process, an effort should be made to have a Spanish-speaking teacher or aide in each classroom. Verbalization by the child should be encouraged in either English or Spanish, for it is imperative that the child begin to express his ideas and feelings regardless of the language used.

Language Development Program

A concentrated language enrichment program should become a part of the elementary school curriculum for Mexican American students from lower socioeconomic levels. Techniques should be utilized which encourage student verbalization of ideas and feelings as well as verbal interaction with students and teacher. These techniques could include the use of large and small group discussions and work projects; the use of experience stories, creative writing, artistic endeavors, drama, and role-playing situations; and involving students in classroom planning.

Instruction should be aimed at helping students develop the ability to use the English language as a device for acquiring and processing the kind of information that is transmitted in the classroom, as well as in the community. Utilization of language patterning activities can prove most beneficial when varied and geared to student interest level.

For those students who speak little or no English, a structured, total emersion, oral-aural experience should constitute a portion of the child's school day. Language patterning which develops

oral fluency and comprehension skills should be emphasized. The time allotted to this instructional period should vary according to the age and level of language development of each child. Children enrolling late, especially Mexican immigrants, should have immediate access to this program.

A program designed to instill motivation for learning basic readiness skills for kindergarten and first grade children from disadvantaged backgrounds has been developed by Southwestern Cooperative Educational Laboratory (SWCEL). This Reinforced Readiness Requisites Program (RRR) is utilized with an entire classroom and rewards are given according to the group's performance. The program consists of the following stages: (1) When the class performance is high, the group receives a reward. These rewards are given on the basis of group rather than individual achievement. (2) Children are given a tangible reward on alternate days and only social praise the remainder of the time. (3) Tokens provide the essential link in moving the children from immediate to delayed rewards. Tokens are given daily for acceptable group performance and are redeemed for a tangible reward at the end of each week. (4) In the final stage, tangible rewards and tokens are gradually withdrawn until the desired performance is maintained through the child's own motivation and the teacher's conventional praise (Lujan and Luft, 1971). The development and application of such a program involves considerable research and study, and in most instances would be too involved and expensive for a school to develop without professional help.

For educational experiences to become relevant and functional for lower socioeconomic level Mexican American students, efforts should be made to broaden the child's experiential background. The development of visual, auditory, and spatial perceptual skills can be enhanced through field trips, resource persons, audio visual materials, physical education programs, and a variety of student-developed activities. These activities, in addition to remediating experiential deficits, also contribute to the acquisition of academic skills. Students should be encouraged to express their interpretations and feelings toward these activities through the use of discussions, role playing, art activities, and creative writing.

REFERENCES

- Anastasi, A. & Foley, J. P. Differential Psychology. New York: Macmillan, 1949.
- Bereiter, C., Engelman, S., Osborne, J., & Reidford, P. A. An academically oriented preschool for culturally deprived children. Fred Hechinger (Ed.), Pre-School Education Today. Garden City, New York: Doubleday, 1966; p. 105-35.
- Bergel, E. E. Social Stratification. New York: McGraw-Hill, 1962.
- Cordova, I. R., Pomerantz, N., & Stevens, F. Evaluation Report on the Sustained Primary Program for Bilingual Education 1968-69. Las Cruces, New Mexico: Las Cruces School District Number 2, 1970.
- Darcy, N. T. Bilingualism and the measurement of intelligence: Review of a decade of research. The Journal of Genetic Psychology, 1963, 103, 259-82.
- DeBlassie, R. R. & Stevens, F. Evaluation of the First Year of a Sustained Primary Program for Bilingual Students 1967-68. Las Cruces, New Mexico: Las Cruces School District Number 2, 1969.
- DeHirsch, L., Jansky, J. J., & Langford, W. S. Predicting Reading Failure. New York: Harper and Row, 1966.
- Deutsch, C. Sociocultural influences and learning channels. In Helen K. Smith (Ed.), Perception and Reading. Newark, Delaware: International Reading Association, 1968.
- Dizney, H. & Fleming E. Sex and I.Q. differences in discrepancies between predicted and obtained achievement. Journal of School Psychology, 1964, 3, 26-31.
- Goldberg, M. L. Factors affecting educational attainment in depressed urban areas. In A. Harry Passow (Ed.), Education in Depressed Areas, Columbia University: Teachers College Press, 1968.
- Gredler, G. R. Performance on a perceptual test with children from a culturally disadvantaged background. In Helen K. Smith (Ed.), Perception and Reading. Newark, Delaware: International Reading Association, 1968.
- Havighurst, R. J. & Breese, F. H. Relation between ability and social status in a midwestern community. III. Primary mental abilities. Journal of Education Psychology, 1947, 38, 241-47.

- Hollingshead, A. B. Two Factor Index of Social Position.
Yale Station, New Haven, Connecticut, 1965. (Mimeographed).
- Lujan, Janice & Max Luft. Quality Assurance Specialist's Handbook.
Albuquerque, New Mexico: Southwestern Cooperative Educational
Laboratory, 1971.
- Mishra, S. P. & Hurt M., Jr. The use of metropolitan readiness
tests with Mexican-American children. California Journal
of Educational Research, 1970, 21, 182-87.
- Mitchell, B. C. Predictive validity of the metropolitan readiness
tests and the Murphy-Durrell reading readiness analysis for
white and for Negro pupils. Educational and Psychological
Measurement, 1967, 27, 1047-54.
- Pomerantz, N. E. An investigation of the relationship between
intelligence and reading achievement for various samples
of bilingual Spanish-speaking children. Unpublished doctoral
dissertation, New Mexico State University, 1970.